***Letter to editor:***

# The challenges of technology-based self-care in chronic diseases: An issue deserving further attention

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Globally, it is well established that the chronic diseases are the major cause of death and disability and associated with poor clinical outcomes, high morbidity, and mortality rate.[1] More than 75% of all health care costs are due to chronic diseases. Therefore, effective management of chronic diseases is a major focus of current health policy.[2] In this regard, one of the substantial components of chronic disease management is self-care activities. Therefore, health-care professionals need effective ways to encourage these patients to self-manage their chronic conditions.[3] Since self-care activities should be done in the patient's home and away from the hospital, there are many challenges ahead to increase the patient's adherence to those activities. As a result, there is a necessity for operational tools to support the self-care activities away from hospitals.

Several studies have recommended the application of technology as a useful and cost-effective tool to support and manage self-care at home.[1, 4-7] Additionally, literature indicates that patients can play an important role in improving health outcomes through technology based self-care.[7-8] Patients can use technology to managing issues related to their chronic disease. For example, to send medication reminders via cell phone, health software application or personally tailored SMS. [7, 9] Public use of technologies such as internet, mobile phones, portable computers and their health software applications has this capability to convey health messages to people anywhere and at the most relevant times. [7] In addition, technology can be used as a tool to monitor symptoms of disease and therefore gives patients the opportunity to manage chronic illness. As a health care tool, several monitoring devices using the internet have been developed to help patients manage their medical conditions at home and if needed receive appropriate recommendations through online communication with health care providers. [8, 9]

There is growing evidences demonstrate the effectiveness of using technology in enhancing engagement and self-care behaviors in patients with chronic diseases such as hypertension, heart failure, diabetes, HIV, COPD, and dementia.[4] However, there is insufficient knowledge about challenges that patients with chronic diseases face, specifically, almost all of these patients are quite old and not familiar with innovative technology such as online services and smart devices. In addition, there is still a lack of knowledge about its applicability for chronic disease. It is unclear whether existing technology tools such as computer software, internet, and mobile devices are meeting the needs of old patients or not. Most importantly, there is still a gap between technological research and innovation. Also, the ways and means of routine clinical practice for these patients have not been well understood. [10]

This letter aims to propose the substantial challenges face by chronic disease patients in self-care in the era of technology and encourage interdisciplinary collaborations researches both quantitatively and qualitatively that address these challenges. These questions must be considered by researcher to enhance the application of technology-based self-care. How can technology help patients manage self-care activities? How can technology assist

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integrating information from diverse providers across different health care settings? Is it possible to design an integrated application for all chronic conditions? Which type of technology is better for patients who live in rural areas? What are the patient's special educational needs to use technology to manage their self-care activities? What are the major barriers to use technology for self-care in chronic disease? What technologies (such as apps, SMS, online services, so on) can efficiently involve patients in understanding and improving their chronic disease?

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**References:**

1. Zulman DM, Jenchura EC, Cohen DM, Lewis ET, Houston TK, Asch SM. How Can eHealth Technology Address Challenges Related to Multimorbidity? Perspectives from Patients with Multiple Chronic Conditions. *J Gen Intern Med*. 2015 Aug;**30**(8):1063-70.
2. Oschman JL. Chronic disease: are we missing something? *J Altern Complement Med.* 2011 Apr;**17**(4):283-5.
3. Turner A, Anderson JK, Wallace LM, Bourne C. An evaluation of a self-management program for patients with long-term conditions. *Patient Educ Couns.* 2015 Feb;**98(**2):213-9.
4. Jacelon CS, Gibbs MA, Ridgway JV. Computer technology for self-management: a scoping review. *J Clin Nurs.* 2016 Mar **18.** doi: 10.1111/jocn.13221. [Epub ahead of print]
5. Oldenburg B, Taylor CB, O'Neil A, Cocker F, Cameron LD. Using new technologies to improve the prevention and management of chronic conditions in populations. *Annu Rev Public Health*. 2015 Mar **18**;36:483-505.
6- Gammon D, Berntsen GK, Koricho AT, Sygna K, Ruland C. The chronic care model and technological research and innovation: a scoping review at the crossroads. *J Med Internet Res*. 2015 Feb 6;**17**(2):e25.
7. Peeters JM, Wiegers TA, Friele RD. How technology in care at home affects patient self-care and self-management: a scoping review. *Int J Environ Res Public Health.* 2013 Oct 29;**10**(11):5541-64.
8. Gephart S, Effken J. Using health information technology to engage patients in their care. *Online Journal of Nursing Informatics (*OJNI), 2013. **17**(3).
9. Kannisto KA, Koivunen MH, Välimäki MA. Use of mobile phone text message reminders in health care services: a narrative literature review. *J Med Internet Res*. 2014 Oct 17;**16**(10):e222.
10. Mair FS, May C, O'Donnell C, Finch T, Sullivan F, Murray E. Factors that promote or inhibit the implementation of e-health systems: an explanatory systematic review. *Bull World Health Organ.* 2012 May 1;**90**(5):357-64.